Fatal effects of Lightning; in a letter to the Rev. JOSEPH WILLARD, *preſident of the univerſity in Cambridge, and vice preſident of the American Academy of Arts and Sciences. By Rev.* JOHN LATHROP, *D.D. A.A.S.*

Boſton, July 1ſt, 1798.

REV. SIR,

IN compliance with the requeſt of the Academy, expreſſed at the laſt meeting, that the ſeveral members would communicate ſuch caſes of the effects of lightning, as may have come to their knowledge, I have the honor to communicate the only caſe which has happened in this town, ſo far as I can learn, in which life has been deſtroyed by a ſtroke of lightning.

The account which I am about to give has been communicated to me by Mr. Benjamin Henderſon. Mr. Henderſon is now 72 years old, and as he was 12 at the *time*, he has a clear remembrance of the thunder ſtorm, and of the effects.

He informs me that he then lived with his mother in the houſe which makes the north ſide of the arch, leading to the dwelling houſe of the late Jonathan Williams, Eſq. There were in the room five gentlemen belonging to the general court, himſelf, his ſiſter, and Deborah Stratton, the young perſon who was killed.

As the ſtorm increaſed, this Deborah, a child of about 13 years old, being intimidated, ran to one of the gentleman, who

ſat

ſat very near a window, and placed herſelf on the floor between his feet; covering her head with the ſkirt of his coat. Mr. Henderſon, who gives me the account, ſat alſo on the floor, not more than two feet from the fatal ſpot.

The cloud came up in the weſt, and in the midſt of the ſtorm, there was a violent diſcharge of thunder, which burſt off the caſing of the window near which they ſat, carrying pieces of the boards to the middle of the room, and filling the whole with a ſtrong ſulphureous ſmell.

As ſoon as the perſons in the room were recovered from the firſt impreſſion, they found the girl was dead. Mr. Henderſon, who gives me the account, was for ſome time inſenſible of what had happened. His ſiſter was alſo ſtruck down. He tells me, he had no recollection of the *clap*, but as he came to his ſenſes, he ſaw the girl dead, and found himſelf ſo injured that he could not ſtand. He was put to bed, and in the morning he found one of his arms was burnt and bliſtered; and ſeveral days paſſed before he recovered the uſe of his limbs.

I cannot determine from any circumſtances related whether the diſcharge was from the cloud, or from the earth. The caſings of the window, indeed, were flung *into* the room, but it appears from careful obſervation, that ſlivers and light pieces of wood, were driven, at the time of exploſion, in every direction from the place where a breach is made.

In the cellar, and directly under the place where the unfortunate child was ſitting, there was an iron ſpit, the one end of

of which ſtood on the ground, and the other reſted on the cellar wall.

The ſharp end of the ſpit, which reſted on the wall, was melted; and directly over the ſpit, there was a ſmall breach in the floor of the room.

If the charge was from the earth, the ſpit conducted it in ſafety, as far as it reached; and as the electrical fluid is always condenſed, and acts with moſt force, at going off, or entering the ſharp point of a conductor; it melted the end of the ſpit, as now deſcribed. The charge then took the neareſt good conducting matter, which happened to be the unfortunate child, ſitting on the floor, directly over the ſpit. In paſſing through the floor, it is probable the fluid diverged; the greateſt part paſſed through the child, and produced inſtant death. A ſmaller portion took Mr. Henderſon's arm, and burned it; the whole then took the iron hinges, and hooks of the window, and the lead in which the glaſs was ſet, and ſo paſſed away without leaving any other marks of its progreſs, except throwing a few bricks from the chimney; or, if the charge was from the *cloud*, the effects and appearances would probably have been the ſame. This accident ſhows the danger of placing ourſelves in the courſe, between different portions of conducting matter, in the time of a thunder ſhower.

The iron ſpit, ſtanding by the wall, in the cellar, and the lead and iron work of the window, were good conductors. The exploſion, whether from the ground, or from the cloud, found

found the unhappy child between thoſe portions of conducting matter, and killed her in a moment.

It is remarkable, that the gentleman, between whoſe feet ſhe ſat, and with the ſkirt of whoſe coat ſhe covered her face, received no hurt.

Auguſt 14th.

SINCE writing the above, another perſon, an inhabitant of Boſton, has been killed by lightning.

On the tenth inſtant, five men were employed, by the ſelectmen of the town, to take a corpſe, which had lain in a place unfrequented, until it became extremely offenſive, and bury it on a ſmall iſland in the harbour.

While digging the grave, they obſerved a cloud gathering nearly over them. As one of the men was at work in the grave, and two others were ſtanding very near, there was an unexpected diſcharge of lightning, which ſtruck to the ground the two men who had been ſtanding by the grave, one on each ſide.

The man who was then *in* the grave, tells me, the clap ſeemed to him like the report of two or three cannon, in as quick ſucceſſion as poſſible. He inſtantly looked up, and ſaw the two men lying on the ground. With ſuch aſſiſtance as he, and the other men were able to give, one of the two, who were ſtruck, was ſoon recovered; in the other, whoſe name

was

was *James Dill*, no remains of life were ſeen; his hat was torn very much, and was lying ſeveral feet from him. There was a breach in the ſkin of his head, from which the blood ran down his face. From the breach in his head there was a duſky appearance like that which is made by the burning of gun powder, down his neck and breaſt, and ſo (chiefly on the left ſide) to his feet.

Col. Revere, who in the diſcharge of his duty as coroner, examined the body, tells me, he obſerved the breach in the ſkin of the head, and alſo a white mark, like a *ſcratch*, down the neck; which he thought, was over the jugular vein; and on each ſide the white appearance, there were duſky ſtreaks as deſcribed before.

The man who was killed, had on a pair of ſtrong canvaſs trowſers, both legs of which were torn open; the left in two or three places.

As the members of the academy wiſh to have every circumſtance communicated, which carries evidence to ſhow the direction of the charge, I will ſubmit the following reaſons to ſhow, that in this caſe, the earth was *poſitive*, and the direction of the charge was upwards.

The morning of the day, and all the forenoon, was extremely hot, with the wind, very ſmall, moſt of the time, from the weſt. After a ſhort calm, about 12 o'clock, there was a light breeze from the eaſt and ſouth eaſt, and in a ſhort time clouds began to appear.

According to the theory, which I believe is now generally received, the eaſt and ſouth eaſt wind having taken from the atmoſphere, a portion of the electrical matter, the particles of vapour, which had been ſeparated by it, approached nearer each other, and appeared in clouds. As the region of the atmoſphere, in which the clouds were thus formed, had been deprived of electrical matter, by the moiſt ſouth eaſt wind, the electricity of the clouds formed in that portion of the atmoſphere, muſt have been *negative*, until ſupplied with the fluid, from ſome other quarter. The cloud which we are now conſidering, I had obſerved with more than common attention from my houſe. It was *ſmall*, but appeared very much condenſed by the action of oppoſite winds.

The men who were on the iſland ſay, there had been no rain or thunder from the time of their landing; the fatal *clap* was the *firſt* diſcharge. As a portion of the electrical matter had been taken off, before and at the time when the cloud was forming, and the clap which killed the man was the *firſt*, there is reaſon to think the charge went from the ſpot on the iſland, where he ſtood, to the cloud, and ſo reſtored the *equilibrium*. Some circumſtantial evidence, that the electricity of the earth was *poſitive*, perhaps may be gathered from the burſting open of the canvaſs trowſers, the tearing of the hat, and the breach in the man's head. The electrical fluid paſſing from the earth, directly under the man, tore aſunder the dry linen trowſers, which were open at the bottom, and tight at the top. The hat alſo, being of wool, and dry, was a bad conductor. It gave ſome obſtruction to the paſſing fluid, and was therefore

torn in pieces, and driven to ſome diſtance. This reſiſtance might alſo give ſuch a direction to the fluid, as to break the ſkin; a thing not common even where ſtrokes of lightning have been fatal. But whether the thoughts now ſuggeſted carry any evidence to prove that the electricity of the earth, in the caſe we have been conſidering, was poſitive, or not, I hope others who have given more attention to ſtudies of this ſort than I have been able to, will be led to make ſuch communications as ſhall ſerve to illuſtrate this intereſting branch of natural philoſophy.

With great reſpect and eſteem,
I am, Sir,
Your moſt obedient,
And humble ſervant,
JOHN LATHROP.

Rev. Dr. Willard.

An account of the effects of Lightning on the houſe of JONATHAN MASON, *Eſq. in Boſton. In a letter to the Rev.* JOSEPH WILLARD, *D.D. L.L.D. and vice preſident of the American Academy of Arts and Sciences. By Rev.* JOHN LATHROP, *D.D.*

SIR,

ABOUT 2 o'clock, P. M. on Wedneſday the 23d of May, a cloud, which had been ſeveral hours collecting in the weſt and north, came up with a briſk wind and heavy claps of